AMENDMENTS TO THE ABSTRACT:

Please replace the Abstract with the following amended Abstract:

ABSTRACT OF THE DISCLOSURE

A method ~~(and structure)~~ of thermally treating a magnetic layer of a wafer, includes annealing, for a predetermined short duration, a magnetic layer of a single wafer, applying at least one local magnetic field to the magnetic layer obtained without making electrical contact to the wafer, and cooling the single wafer using argon. The annealing includes heating only a local area on the single wafer at a temperature of 280 degrees C for 60 seconds in the presence of a magnetic field using a rapid thermal anneal (RTA) lamp. The applying a magnetic field to the magnetic layer is conducted after the annealing and includes applying local fields in different directions to different areas of the single wafer. The single wafer includes a magnetic stack formed thereon, the magnetic stack having a structure of 50TaN/50Ta/175PtMn/15CoFe/9Al/50Py/100TaN.

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